

SEARCHED  
INDEXED  
SERIALIZED  
FILED  
pages 22-26  
1999/G014/WO  
July 30, 2001

EP0005759

- 22 -

**Claims**

1. A process for the continuous preparation of a  
5 bimodal or multimodal mixture of two or more amorphous  
polyolefins having a different molar mass, wherein the  
viscosity ratio of at least two amorphous polyolefins  
having a different molar mass is less than 0.005 and  
greater than 4 and a) the amorphous polyolefin having a  
10 high molar mass is prepared by solution polymerization  
in one reactor of an assembly of two or more reactors  
connected in parallel or in series and the other  
constituents of the mixture are produced in the other  
reactors after which the polyolefins are mixed in  
15 solution, or b) the amorphous polyolefin having a high  
molar mass is prepared by solution polymerization in  
one reactor and the other constituents of the mixture  
are introduced in the form of a polymer solution into  
the solution flowing from the reactor, and the solution  
20 of polymer mixture obtained according to a) or b) is  
homogenized and the solvent is separated off.

2. The process as claimed in claim 1, wherein the  
amorphous polyolefin having a high molar mass has a VN  
25 of > 80 ml/g and an  $M_w$  of > 90,000 g/mol.

3. The process as claimed in claim 1, wherein the  
amorphous polyolefin having a high molar mass has a VN  
of > 100 ml/g and an  $M_w$  of > 100,000 g/mol.

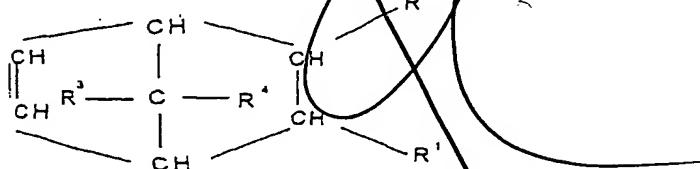
30

4. The process as claimed in claim 1, wherein the  
amorphous polyolefin having a high molar mass has a VN  
of > 120 ml/g and an  $M_w$  of > 120,000 g/mol.

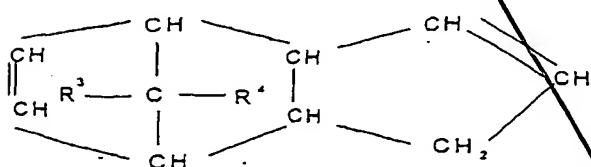
5. The process as claimed in claim 1, wherein the amorphous polyolefin having a high molar mass has a VN of > 150 ml/g and an  $M_w$  of > 150,000 g/mol.

5 6. The process as claimed in any of claims 1 to 5,  
wherein the amorphous polyolefin is a cycloolefin  
copolymer.

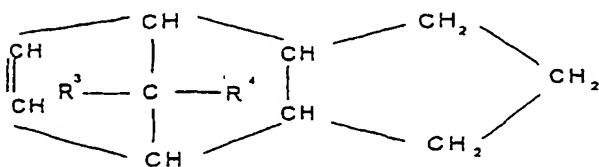
10 7. The process as claimed in one or more of claims 1 to  
6, wherein the bimodal or multimodal mixture comprises  
at least one cycloolefin copolymer comprising from 0.1  
to 100% by weight, based on the total mass of the  
cycloolefin copolymer, of polymerized units derived  
from at least one polycyclic olefin of the formula I,  
15 II, II', III, IV, V or VI.



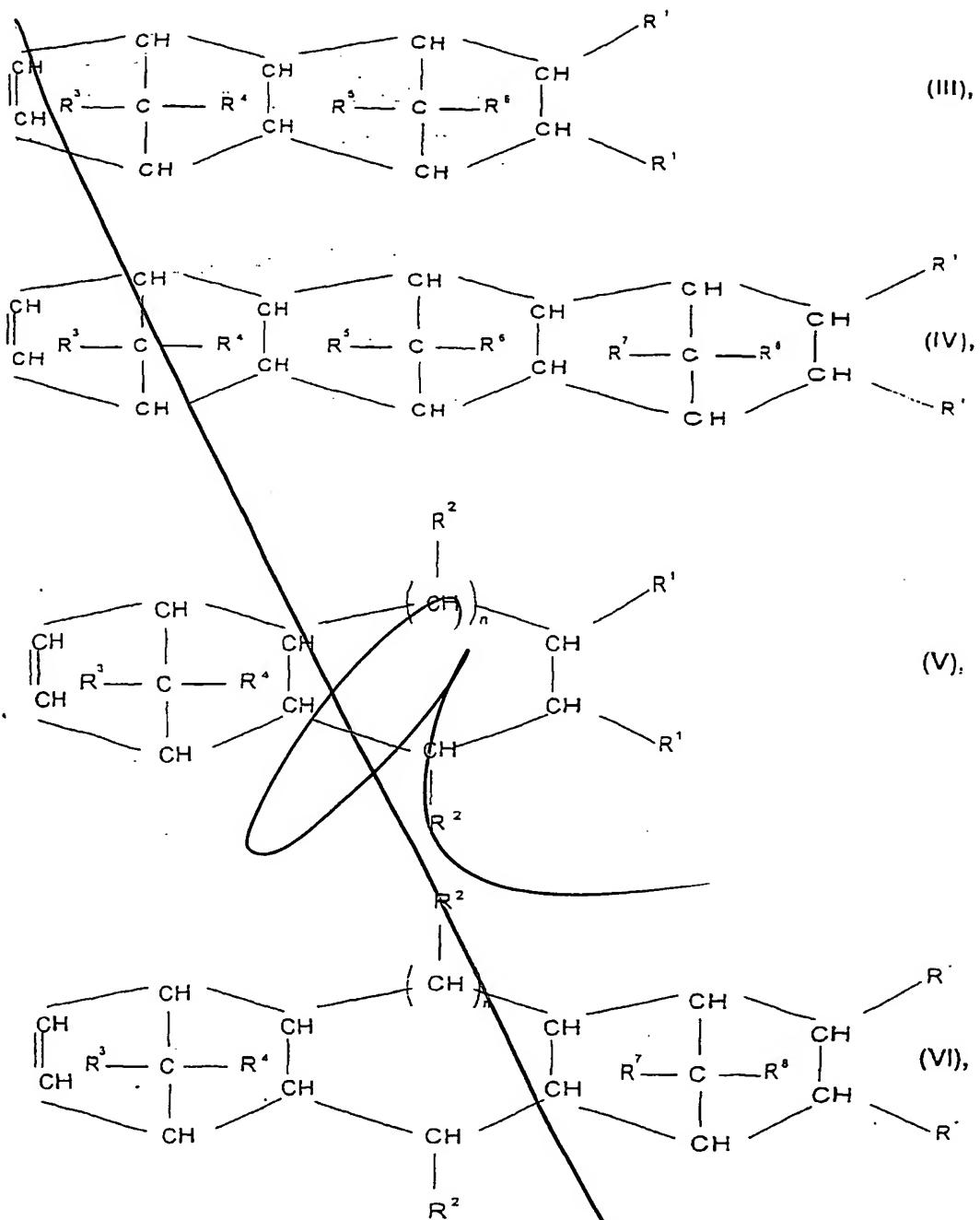
(1),



(11),



(11),



5 where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> are identical or  
 10 different and are each a hydrogen atom or a C<sub>1</sub>-C<sub>20</sub>-hydrocarbon radical such as a linear or branched C<sub>1</sub>-C<sub>8</sub>-alkyl radical, a C<sub>6</sub>-C<sub>18</sub>-aryl radical, a C<sub>7</sub>-C<sub>20</sub>-alkylenaryl radical or a cyclic or acyclic C<sub>2</sub>-C<sub>20</sub>-alkenyl radical or form a saturated, unsaturated or

aromatic ring, where identical radicals R<sup>1</sup> to R<sup>8</sup> in the various formulae I to VI can have different meanings, and n can be from 0 to 5, and, if desired, up to 99.9% by weight, based on the total mass of the cycloolefin 5 copolymer, of polymerized units derived from one or more acyclic olefins of the formula VII



10 where R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup> and R<sup>12</sup> are identical or different and are each a hydrogen atom, a linear, branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub>-hydrocarbon radical such as a C<sub>1</sub>-C<sub>8</sub>-alkyl radical or a C<sub>6</sub>-C<sub>18</sub>-aryl radical.

15 8. The process as claimed in one or more of claims 1 to 7, wherein the cycloolefin copolymers further comprise up to 45% by weight, based on the total mass of the cycloolefin copolymer, of polymerized units derived from one or more monocyclic olefins of the formula VIII



where m is from 2 to 10.

25 9. The process as claimed in one or more of claims 1 to 8, wherein the cyclic and polycyclic olefins contain one or more of the groups halogen, hydroxyl, ester, alkoxy, carboxy, cyano, amido, imido and silyl.

30 10. The process as claimed in one or more of claims 1 to 9, wherein the cycloolefin copolymers comprise

- 26 -

~~polymerized units derived from polycyclic olefins of the formula I or III and polymerized units derived from acyclic olefins of the formula VII.~~

*SN 5  
Ar*  
11. The process as claimed in one or more of claims 1 to 10, wherein the cycloolefin copolymers comprise polymerized units derived from olefins having a norbornene skeleton, preferably from norbornene, tetracyclododecene, vinylnorbornene or norbornadiene.

10

12. The process as claimed in one or more of claims 1 to 11, wherein the cycloolefin copolymers comprise polymerized units derived from acyclic  $\alpha$ -olefins having from 2 to 20 carbon atoms, preferably ethylene or 15 propylene, particularly preferably ethylene.

*Add A*